System Protect Software

User Manual

Table of Contents

1 Introduction 4
1.1 Supported platforms 4
1.2 Quickly setup 5
2 Installation and configuration for SPS in the Windows 6
2.1 Installing the SPS 6
2.2 Starting the SPS 6
2.3 Configuring the SPS 7
2.4 Uninstall the SPS 10
2.4 Configuring the Port 10
3 Installation and configuration in Linux, MAC OS and Unix 11
3.1 Installing the SPS 11
3.2 Starting the SPS 12
3.2.1 Linux (MAC OS) with GUI 12
3.2.2 Linux (Unix) with CUI 13
3.3 Configuring the SPS 13
3.3.1 Linux (MAC OS) with GUI 13
3.3.2 Linux(Unix) with CUI 13
3.4 Uninstall the SPS 16
3.5 Configuring the Port 16
4 Installation and configuration for SPS in the VMware ESX 18
4.1 Configuring for VMware ESX 18
4.1.1 Configuring VMs startup/shutdown automatically 18
4.1.2 VMware tools 19
4.1.3 Configuring the Port 20
4.2 Configuring the SPS 20
5 Installation and configuration for SPS in the VMware ESXi (paid version) 21
5.1 Configuring for VMware ESXi 21
5.1.1 Installing and configuring the VMA 21
5.1.2 Configuring VMs startup/shutdown automatically 21
5.2 SPS Configuration 22
6 Installation and configuration for SPS in the Hyper-V Server 2008 24
6.1 Hyper-V configuration 24
6.2 Installing and configuring the SPS 25
6.3 Uninstall the SPS 26
7 Shutdown Operation 28
7.1 Shutdown flow chart 28
7.2 Shutdown setting（NMC Webpage Side） 28
7.2.1 Shutdown actions setting 28
7.2.2 Warning Period Setting 29

7.2.3 UPS Shutdown Delay Setting....29
7.2.4 Shutdown continue or not if events restored. 30
7.3 Shutdown order 30
7.3.1 Shutdown continue if events restored 30
7.3.2 Shutdown discontinue if events restored....31
7.4 Redundant UPS Input shutdown 32
7.5 Simulate shutdown by event....33

1 Introduction

The SPS (System Protect Software) is one utility which communicates with NMC (Network Monitoring Card). SPS provides logs events, notifies users of events, arranges actions for application and is also able to offer shutdown parameters setting for PC when it is necessary. SPS can provides safety shutdown method against unexpected interrupted due to the power failure. With the SPS, it can save application's data and documents before shutdown of system as well.

SPS has two major components: "SPS Service" and "SPS Interface", SPS Service runs in the background as a system service; and SPS Interface is a user interface application that allows the user to tailor the configuration parameters.

1.1 Supported platforms

Supported platforms：

Windows
Windows XP Home Edition
Windows XP Professional
Windows 2000
Windows Server 2003 x32, x64
Windows Server 2008 x32, x64
Windows Server 2012 x64
Windows Vista x32, x64
Windows 7 x32, x64
Windows 8 x32, x64
Hyper-V Server 2008
LINUX
Red Hat Enterprise Server 5.x for i386, AMD64
Red Hat Enterprise Server 6.x for i386, AMD64
SUSE Enterprise Server 10.x for i386, AMD64
SUSE Enterprise Server 11.x for i386, AMD64
Ubuntu 8.x for i386, AMD64
Ubuntu 9.x for i386, AMD64
Ubuntu 10.x for i386, AMD64
MAC OS
Mac OS 10.5 for PPC
MAC OS 10.6 for Intel
MAC OS 10.7 for Intel
MAC OS 10.8 for Intel

VMware Server
VMware ESXi 4.0/4.1 (paid version)
VMware ESXi 5.0 (paid version)
VMware ESXi 5.1 (paid version)
VMware ESX 4.0/4.1
Unix
Solaris 10 for Intel/Sparc
FreeBSD 7.X, 8.X, 9.X

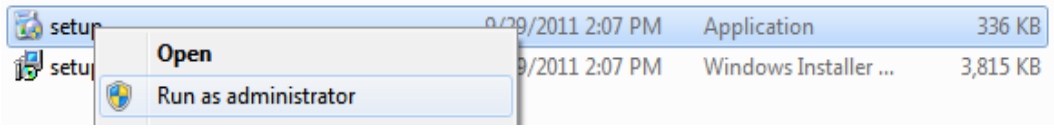
1.2 Quickly setup

- Install and start the SPS in the different system platform according to section 1 to 6. The SPS service will be started automatically at the system boot.
- Open the SPS user interface; enter the NMC IP address to add the device.
- Select the alarm events from Events list. All the alarm events will be selected by default.
- To check the setting, you could simulate the system shutdown by SPS, according to section 7.5.

2 Installation and configuration for SPS in the Windows

2.1 Installing the SPS

- For Windows XP operating system, open the Windows folder, the installing process can be executed by double click the program icon (“setup.exe” or “setup.msi”) directly. For Microsoft Windows Vista, server 2008, server 2012,Windows 7 and 8 operating systems, it recommends the installing process is executed with the administrator account; If it is not login as administrator for the operating system the installing process is also able to be executed by right click the program icon and then click “Run as administrator”. It will execute the installing process as the administrator account.



For Windows 2000 operating system, open the Windows-2000 folder, the installing process can be executed by double click the program icon “setup.exe”.

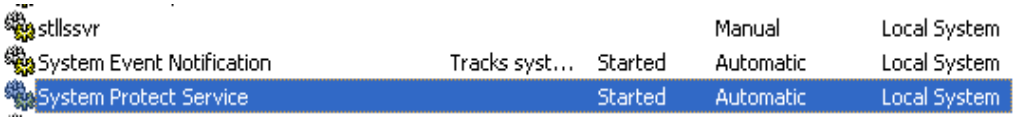
Note: The setup.msi is not available for Windows Vista operating system, Windows 7 and Windows 8 OS.

- Follow the instructions step by step to finish the installing process.
  - By default of 32 bit operating system, SPS installs to “C:\Program Files\System Protect Software”.
  - By default of 64 bit operating system, SPS installs to “C:\Program Files (x86)\System Protect Software”

2.2 Starting the SPS

SPS service starts automatically when operating system boots as default.

- There are two methods to start the SPS manually:
  - Select Start menu > All Programs > System Protect Software to start the Tray Icon and SPS service.
  - Select Start menu > Control Panel > Administrative tools > Services, and find the service System Protect Service. Right click it and select Start to start the SPS service.

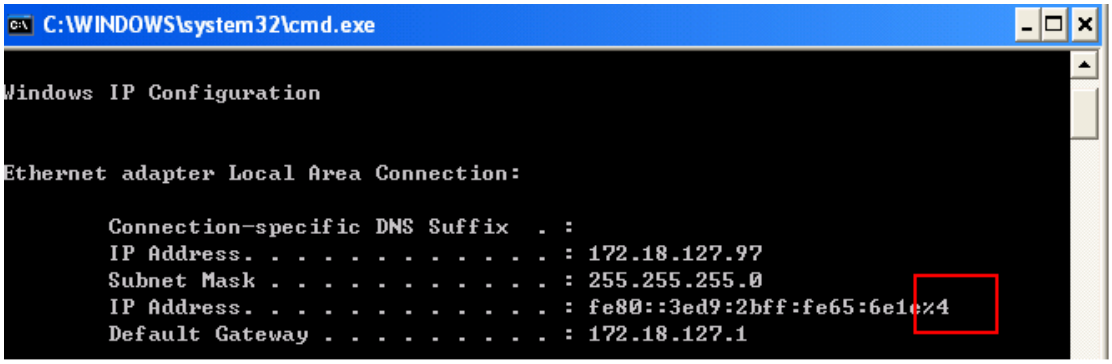


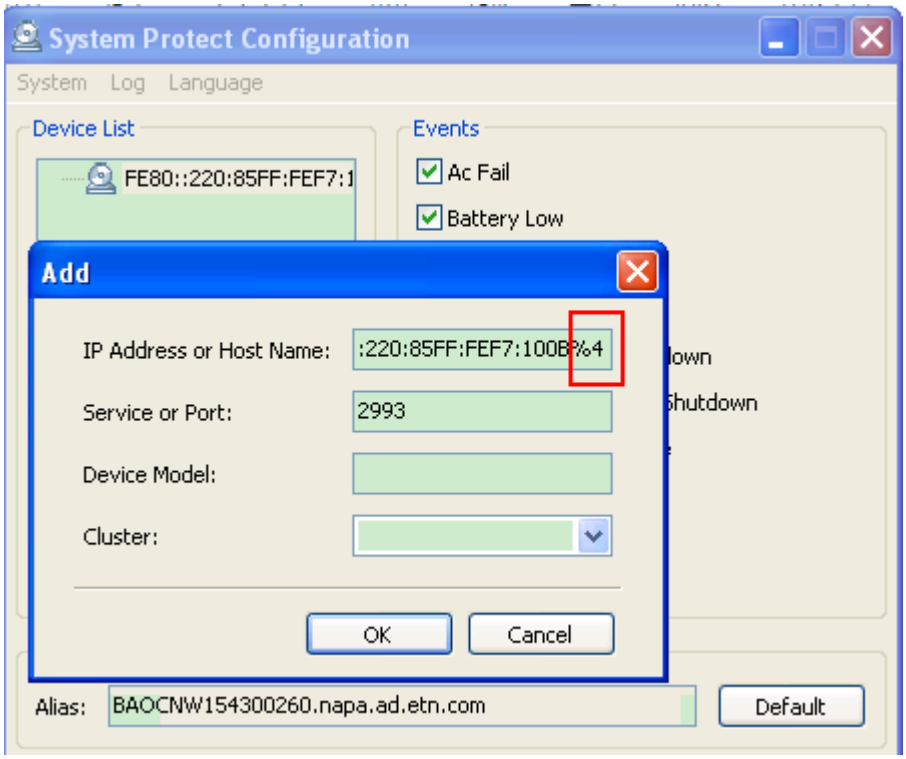
- SPS Icon appears in status area of the task bar after the SPS service start。Double click the Icon will start up the SPS interface screen.

2.3 Configuring the SPS

- SPS offers authority system. Only the administrator of SPS has full privilege to configure and access in SPS. Users have privilege for reading SPS only. The administrator of SPS is able to login by click “System” > “Act as Administrator” and then enter the password. By default, the password is “admin”.

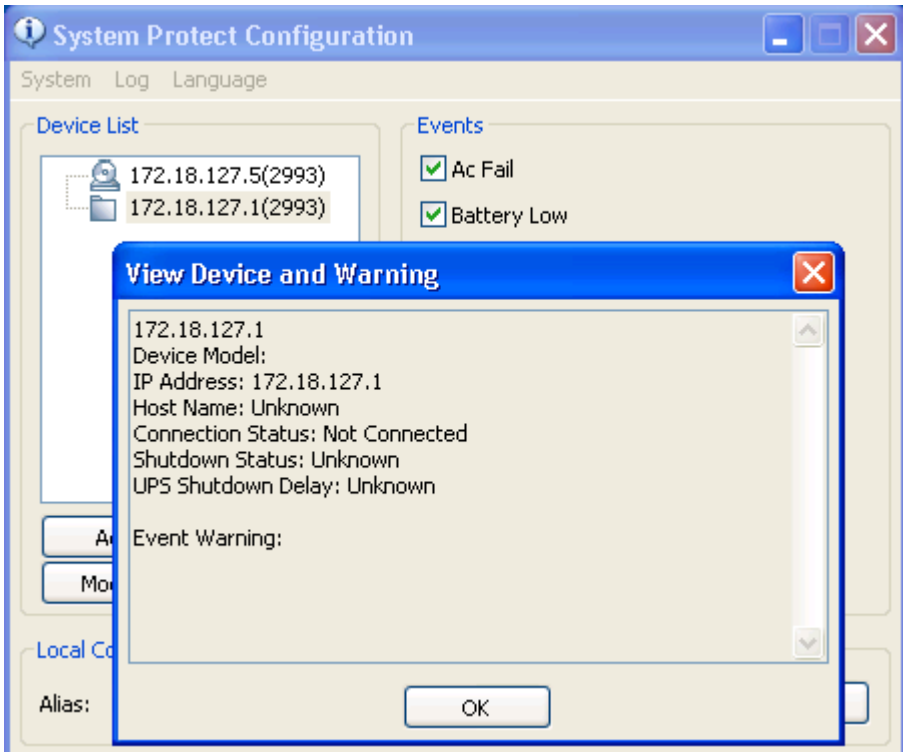
- Enter the IP address of NMC via click “Add” button on the screen of SPS.
  Enter the Cluster name if the computer is protected by the redundant UPS Input.
  The NMC UPSs that under the same Cluster name will become a group.
  Note: Please add the network id (for example: %4) as the below image, if the IP address is IPV6.


C:\WINDOWS\system32\cmd.exe
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . : 172.18.127.97
Subnet Mask . . . . . : 255.255.255.0
IP Address. . . . . : fe80::3ed9:2bff:fe65:6e1e%4
Default Gateway . . . . . : 172.18.127.1



- The device icon in the tree view will be abnormal if enter the error IP address. Click the View button, the Connection Status shows Not Connected

  Note：The connection will fail if the UPS output is off.



Synchronously, the Tray Icon in the task widows will be signed with warning. Move the mouse to the Tray Icon, The detailed information will be prompted.

- Select the alarms checkbox in the Event list: When the events occur, the SPS will pop up alarm dialog or shutdown the computer gracefully.
  Unselect the alarms checkbox in the Event list: When the events occur, the SPS will not pop up alarm dialog and will not shut down the computer.
  Supported Alarms:
  AC fail, Battery Low, UPS overload, UPS over temperature, Weekly Schedule Shutdown, Specific Day Schedule Shutdown, EMP over Temperature, EMP over Humidity, EMP Contact1 Alarm, and EMP contact2 Alarm.

- In the Action option, select Event Warning, Shutdown, or Sleep button。
  By the default, Shutdown is selected

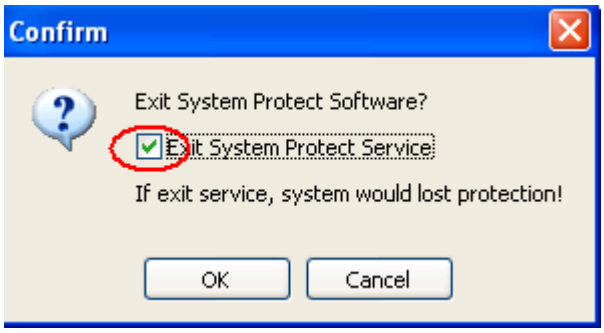
Action	Definition
Event Warning	When the events occur，The SPS will pop up the alarm dialog, but the computer will not shut down or sleep.
Shutdown	When the shutdown condition is met, the SPS will send the shutdown command to system.
Sleep	When the shutdown condition is met, the SPS will send the sleep command to system.

- In the System shutdown option, set the shutdown parameters.
  The parameters are defined as following:

Shutdown Parameters	Definition
Cancel Shutdown if events Restored in Shutdown Delay	If the checkbox is selected, the shutdown (sleep) will be cancelled in system delay when the events restore to normal. If the checkbox isn't selected, the system will be shut down (sleep) in shutdown delay even if the events restore to normal. The checkbox isn't chosen as default.
Shutdown Delay	The SPS will send the shutdown (sleep) command to the computer after shutdown delay time when the shutdown condition is met. The shutdown Delay is 0 s as default.
Run Script Before Shutdown	If the checkbox is selected, the Script will be executed before the system shutdown (sleep). By the default, the SPS will not execute the script before system shutdown.
Script Max Execution Time	The script run will be ended when the max execution time is met. The script max execution time is 60s as default.

2.4 Uninstall the SPS

- Right click the Tray Icon, select Exit.
  Select the Exit System Protect Service in the prompted dialog to exit the SPS user interface and SPS service。



- Select Start menu > All Programs > System Protect Software > Uninstall System Protect Service, uninstall the SPS

2.4 Configuring the Port

The SPS use UDP 3034 as the communication port with NMC as default. Please open the port according the command as below:

netsh.exe firewall add portopening udp 3034 SPSPort

Note: If the UDP 3034 is captured by the other program, the number of the port value will be added 1(range from 3034~3083)

3 Installation and configuration in Linux, MAC OS and Unix

3.1 Installing the SPS

-

Operation System	packages
Linux i386 with GUI (Graphics User Interface Mode)	SPS-GUI-*.*.*.*-linux-i386.tar.gz SPS-CUI-*.*.*.*-linux-i386.tar.gz The two packages above are supported in GUI mode
Linux i386 with CUI（Console User Interface Mode）	SPS-CUI-*.*.*.*-linux-i386.tar.gz
Linux AMD 64 with GUI(Graphics Mode)	SPS-GUI-*.*.*.*-linux-x86_64.tar.gz SPS-CUI-*.*.*.*-linux- x86_64.tar.gz The two packages above are supported in GUI mode
Linux AMD 64 with CUI（Console Mode）	SPS- CUI-*.*.*.*-linux-x86_64.tar.gz
MAC OS 10.7 for Intel	SPS-*.*.*.*-MACOSX-10.7-intel.tar.gz
MAC OS 10.6 for Intel	SPS-*.*.*.*-MACOSX-10.6-intel.tar.gz
MAC OS 10.5 for PPC	SPS-*.*.*.*-MACOSX-10.5-ppc.tar.gz
Solaris 10 for Intel	SPS-CUI-*.*.*.*-solaris-intel.tar.gz
Solaris 10 for Sparc	SPS-CUI-*.*.*.*-solaris-sparc.tar.gz

- Extract the file, Enter the command:
  tar –zxvf SPS*
  Note: for the solaris OS, please extract as following:
  gunzip SPS*.tar.gz
  tar –xvf SPS*.tar

- Installing the file, Enter the command:
  ./SPS.install
- Finish the installation, Enter “y”
- By default, the SPS is installed to /opt/sps

3.2 Starting the SPS

3.2.1 Linux (MAC OS) with GUI

- Start the SPS service in the installation directory, enter the command:
  ./SPSService
  SPS service will run automatically in the background when the system boot.
  Select to start the SPS service or not when the system boots by the following command in table.

Operation System	Starting the SPS Service when system boot	Stopping the SPS Service when system boot
RedHat	chkconfig --add SPSService	chkconfig --del SPSService
SUSE	chkconfig --add SPSService	chkconfig --del SPSService
Ubuntu	sudo update-rc.d SPSService defaults	sudo update-rc.d –f SPSService remove
MAC OS	sudo launchctl load /Library/LaunchDaemons/SPSService.plist	sudo launchctl unload /Library/LaunchDaemons/SPSService.plist

- For the Linux , Start the SPS user interface in the installation directory, enter the command：
  ./SPS
  For the MAC OS, Start the SPS user interface in the installation directory, enter the command：
  open SPS.APP
  The packages in the below table are needed. In generally, the packages will be installed in the system as default:

Library Name	Provided by Package	Super Package
gtk-x11-2.0	gtk2	
gdk_pixbuf-2.0	gtk2	
gthread-2.0	libgthread-2_0-0	glib2
glib-2.0	glib2	glib2
gmodule-2.0	libgmodule	glib2
gobject-2.0	libgobject-2_0-0	glib2
atk-1.0	atk/libatk	
pango-1.0	pango	
freetype	freetype2	
fontconf	fontconfig	
Xrender	xorg-x11-libXrender	xorg-x11
x11	xorg-x11-libX11	xorg-x11
Xext	xorg-x11-libX11	xorg-x11
png12	libpng12-0	
z	zlib	

3.2.2 Linux (Unix) with CUI

Note: The GUI mode of SPS for Unix OS is not supported. Please use the CUI mode of SPS for Unix.

- Start the SPS service in the installation directory, enter the command:
  ./SPS –s
  Restart the SPS service, Enter the command: **./SPS -r**
  SPS service starts automatically at system boot as default.

- The SPS user interface is unavailable in the Linux with CUI，refer to the SPS command parameters in the below table：

Parameter	Function	Comment
-h	Print all the parameters and functions	
-v	Show the software version and copyright	
-S	Start SPS service automatically at system boot	Take effect at next boot
-X	Stop SPS service at system boot	Take effect at next boot
-s	Start SPS service	Take effect immediately
-x	Exit SPS service	Take effect immediately
-r	Restart SPS service	Take effect immediately
-l	List all the device and status	
-p	Check the shutdown parameters	
-i	Modify the configuration parameters	Enter the password, edit the configuration by the vi tool
-c	Modify the password	Enter the old password, then input the new password

3.3 Configuring the SPS

3.3.1 Linux (MAC OS) with GUI

Refer to the SPS configuration in Windows (section 2.3)

3.3.2 Linux(Unix) with CUI

Note: The GUI mode of SPS for Unix OS is not supported. Please use the CUI mode of SPS for Unix.

- Enter the command：**./SPS –i** .
  Input the password, the password is admin as default. Open the configuration by vi tool.

- Modify the parameters configuration, save and exit.

3.3.2.1 Add the device, set the Redundant UPS Input if the computer is protected by multi-devices.

For example：

The IP address of NMC is 172.18.127.65 and 172.18.127.66 in group1

The IP address of NMC is 172.18.127.73 and 172.18.127.74 in group2

```
<Cluster name="group1">
    <Remote name="172.18.127.65" serv="2993" model="/>
    <Remote name="172.18.127.66" serv="2993" model="/>
</Cluster>
<Cluster name="group2">
    <Remote name="172.18.127.73" serv="2993" model=""/>
    <Remote name="172.18.127.74" serv="2993" model=""/>
</Cluster>
```

3.3.2.2 Set the alarm attribute

Enable the alarm, set the value to 1. The SPS will pop up alarm in the console and protect the system to shut down gracefully.

Disable the alarm, set the value to 0. The SPS will not pop up alarm and will not shut down the system.

```
<AcFail>1</AcFail>
<BatteryLow>1</BatteryLow>
<Overload>1</Overload>
<OverTp>1</OverTp>
<EMPTp>1</EMPTp>
<EMPHum>1</EMPHum>
<EMPCt1>1</EMPCt1>
<EMPCt2>1</EMPCt2>
<WSS>1</WSS>
<SSS>1</SSS>
```

3.3.2.3 Set the shutdown parameters

```
<CancelIf>0</CancelIf>
<ShutDelay>0</ShutDelay>
<EnableScript>0</EnableScript>
<Script></Script>
<MaxScriptTime>60</MaxScriptTime>
```

Shutdown Parameters	Definition
Cancel Shutdown if events Restored in Shutdown Delay <CancelIf>0</CancelIf>	If the value is 0, the system will be shut down (sleep) in shutdown delay even if the events restore. If the value is 1, the shutdown (sleep) will be cancelled in system delay when the events restore.

Shutdown Delay <ShutDelay>0</ShutDelay>	The SPS will send the shutdown (sleep) command to the computer after shutdown delay time when the shutdown condition is met. The shutdown Delay is 0 s as default.
Enable or disable the Script <EnableScript>0</EnableScript>	If the value is 1, enable to run the script If the value is 0, disable to run the script
Run Script Before Shutdown <Script></Script>	Enter the path of the script; the script will be executed before the system shutdown (sleep). By the default, the SPS will not run the script before system shutdown. For example: <Script>/opt/sps/shutdown.sh</Script>
Script Max Execution Time <MaxScriptTime>60</MaxScriptTime>	The script run will be ended when the max execution time is met. The script max execution time is 60s as default

3.3.2.4 Set the actions

<Action>1</Action>

Note: The system should have hibernation function if the action is set to 2.

Action	Definition
Event Warning (The action value is set to 0)	When the events occur，The SPS will pop up the alarm dialog, but the computer will not shut down or sleep.
Shutdown (The action value is set to 1)	When the shutdown condition is met, the SPS will send the shutdown command to system.
Sleep (The action value is set to 2)	When the shutdown condition is met, the SPS will send the sleep command to system.

- Restart the SPS service after configuration end, Enter the command:
  ./SPS –r

- View the device status by the command:
  ./SPS –l
  For example: The device status for 172.18.127.65 as below image.

```
[root@PC001 sps]# ./SPS -l
172.18.127.65[group1]
Device Mode: CLK
IP Address: 172.18.127.65
Host Name: Unknown
Connection Status: Connected
Shutdown Status: Normal
UPS Shutdown Delay: 2s
```

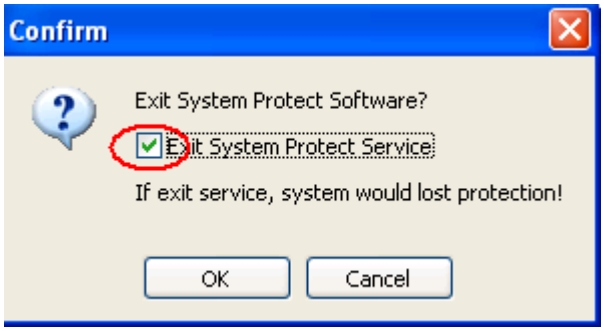
- View the shutdown configuration by the command:
  ./SPS –p
  For example, the shutdown configuration as below image：

```
[root@PC001 sps]# ./SPS -p
Event Accepted:
Ac Fail: enable
Battery Low: enable
UPS Overload: enable
UPS Over Temperature: enable
Weekly Schedule Shutdown: enable
Specific Day Schedule Shutdown: enable
EMP Over Temperature: enable
EMP Over Humidity: enable
EMP Contact1 Alarm: enable
EMP Contact2 Alarm: enable

Ignore restore event in shutdown delay: enable
Shutdown delay: 0s

Run script before shutdown: disable
```

- Modify the password, enter the command:**./SPS –c**

3.4 Uninstall the SPS

- Exit the SPS user interface， Select the Exit System Protect Service in the prompted dialog to exit the SPS service。



For the Linux with CUI, exit the SPS service, run the command: **./SPS –x**

- Uninstall the SPS, enter the command in the directory where the installation package extracted:
  ./SPS.remove

3.5 Configuring the Port

- The SPS use UDP 3034 as the communication port with NMC by default.
  Note: If the UDP 3034 is captured by the other program, the number of the port will be added 1(range from 3034~3083)

- Open the UDP port by the following command:
  iptables -I INPUT -p udp --dport 3034 -j ACCEPT

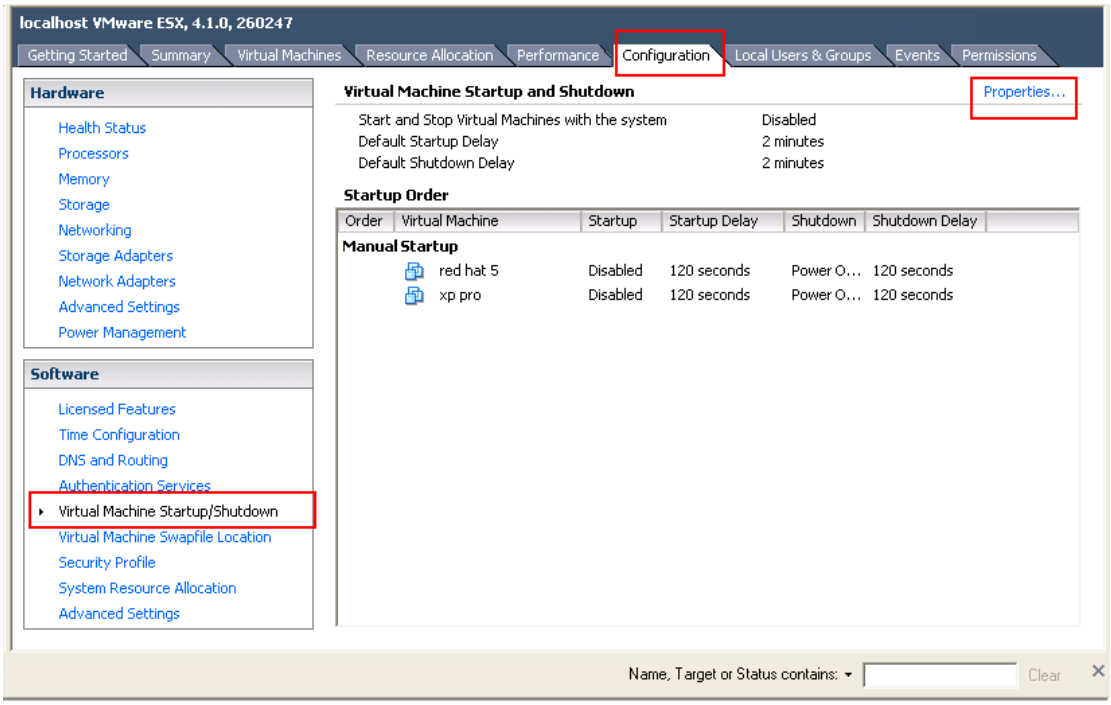
iptables -I OUTPUT -p udp --dport 3034 -j ACCEPT
/etc/rc.d/init.d/iptables save

4 Installation and configuration for SPS in the VMware ESX

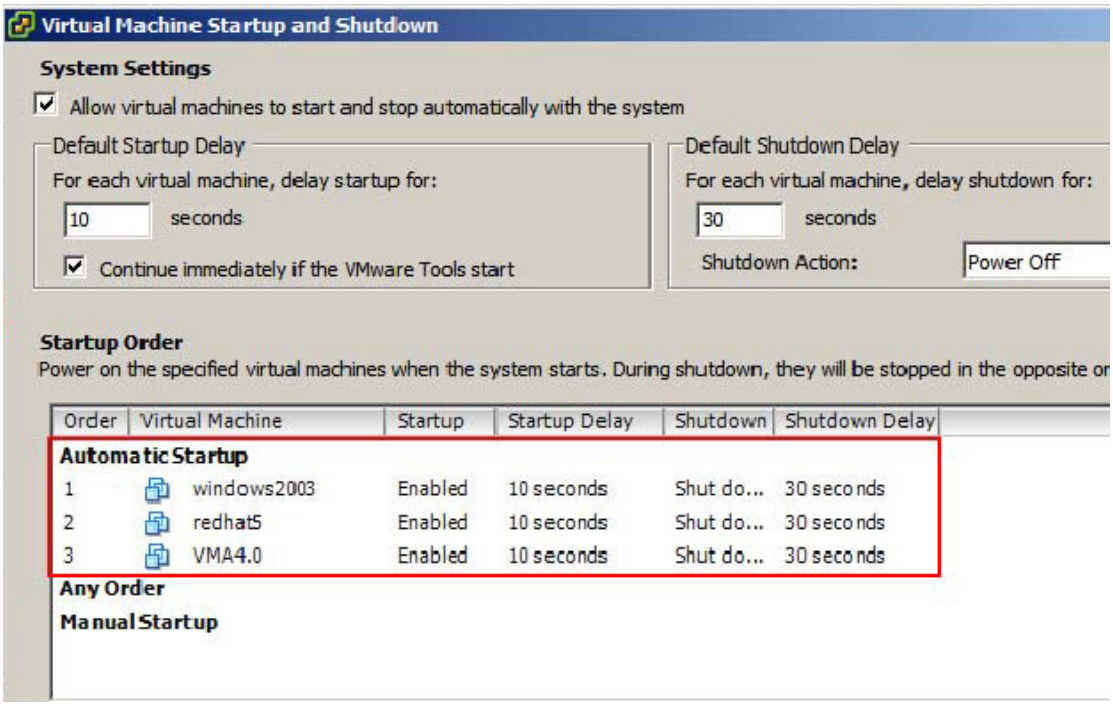
4.1 Configuring for VMware ESX

4.1.1 Configuring VMs startup/shutdown automatically

- Start VMware Client, select Configuration -> Virtual Machine Startup/Shutdown->Properties

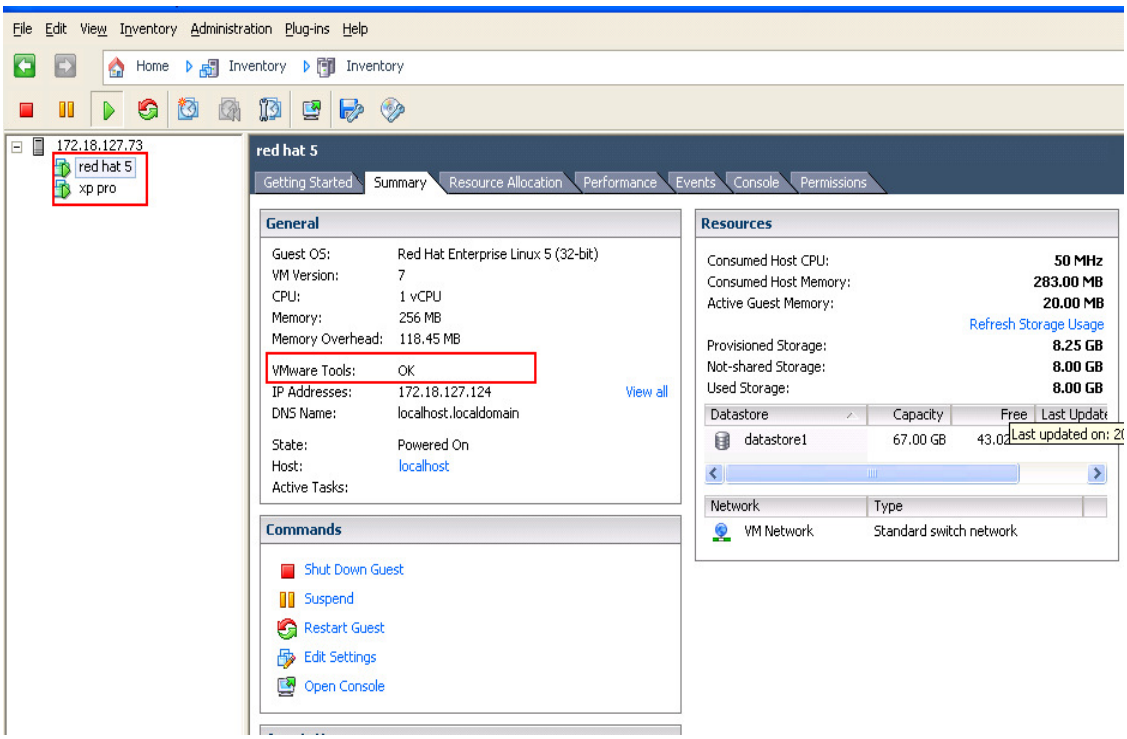


- Select Allow virtual machines to start and stop automatically with the system checkbox.
  Enter the settings as shown on the Virtual Machine Startup and Shutdown window:
  For each virtual machine, set delay startup for 10 seconds
  For each virtual machine, set delay shutdown for 30 seconds
  Move up the virtual machines to the Automatic Startup list.
  The virtual machines will start/stop when the host start/shutdown automatically.



4.1.2 VMware tools

- Install the VMware tool for each guest OS.
  Select the guest OS, click summary menu, the status for VMware tools will show OK if the VMware tools is installed successfully.



4.1.3 Configuring the Port

- The SPS use UDP 3034 as the communication port with NMC as default.
  Note: If the UDP 3034 is captured by the other program, the number of the port will be added 1(range from 3034~3083)

- Open the UDP port by the following command:
  esxcfg-firewall -o 3034,udp,in,SPS
  esxcfg-firewall -o 3034,udp,out,SPS

4.2 Configuring the SPS

- Start the VMware Server host, refer to the chapter 3 (Linux with CUI) to finish the SPS Installation and configuration.

- Set the shutdown script for VMware ESX. The document of shutdownESX.sh is the script for shut down the virtual machines。
  Enter the command: **./SPS -i**
  Find the two lines in the configuration and edit it as below:
  <EnableScript>1</EnableScript>
  <Script>**/opt/sps/ShutdownScript/shutdown**</Script>

- Set the Script Max Execution Time based on the amount of Virtual machines. Set apart 30s for each virtual machine.
  For example: there are ten virtual machines:
  Enter the command: **./SPS -i**
  Find the line in the configuration and edit it as below:
  <MaxScriptTime>300</MaxScriptTime>

- Restart the SPS service by the command: **./SPS –r**

5 Installation and configuration for SPS in the VMware ESXi (paid version)

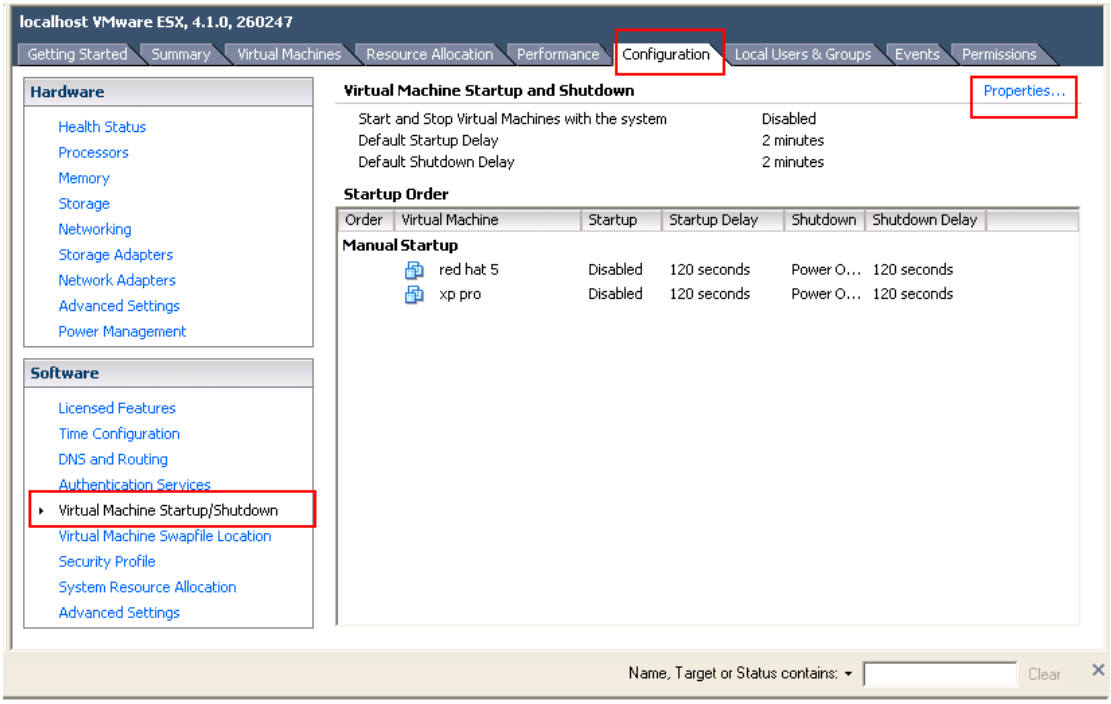
5.1 Configuring for VMware ESXi

5.1.1 Installing and configuring the VMA

- Go to the website :http://www.vmware.com/support/developer/vima/
  Download the VMA, and extract it, the format for the VMA document is *.OVF.
- Start the VMware Client, select File > Deploy OVF Template, click the browse button, select the OVF document.
- Start VMA, the default user name is vi-admin. Set the password for the first login.

5.1.2 Configuring VMs startup/shutdown automatically

- Start VMware Client, select Configuration -> Virtual Machine Startup/Shutdown->Properties

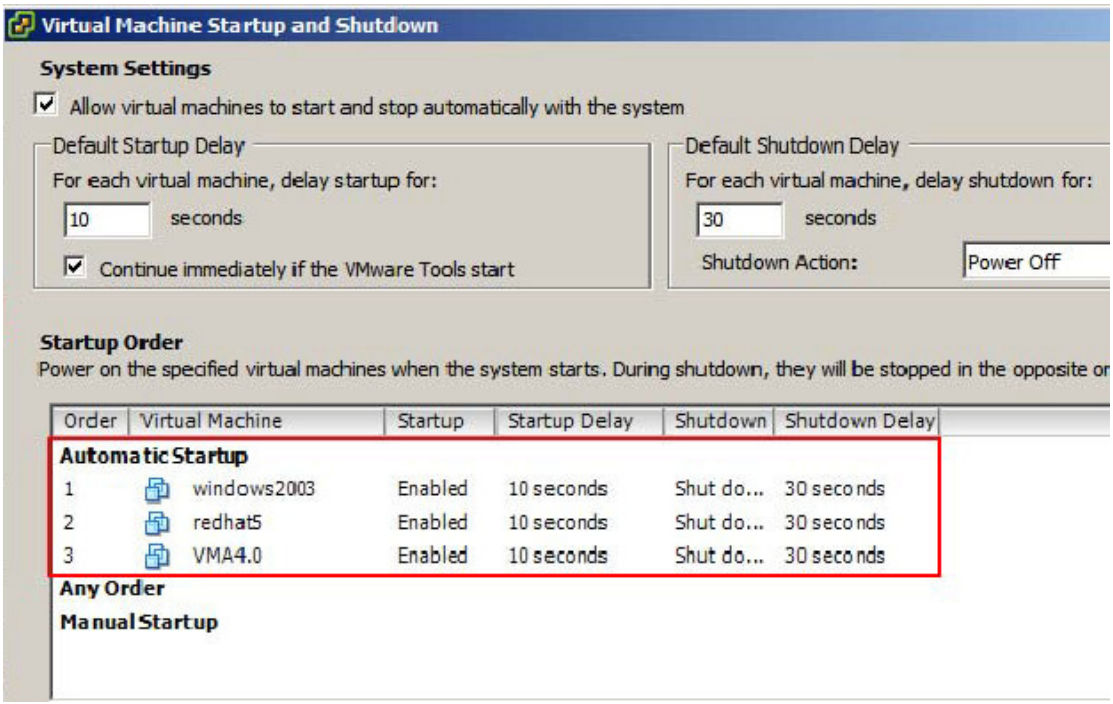


- Select Allow virtual machines to start and stop automatically with the system checkbox.
  Enter the settings as shown on the Virtual Machine Startup and Shutdown window:
  For each virtual machine, set delay startup for 10 seconds
  For each virtual machine, set delay shutdown for 30 seconds

Move up the virtual machines to the Automatic Startup list

The virtual machines will start/stop when the host start/shutdown automatically.

Note: if the “shutdown” is selected in the Shutdown Action, make sure the vmware tools installed for each virtual machine.


Virtual Machine Startup and Shutdown
System Settings
Allow virtual machines to start and stop automatically with the system
Default Startup Delay
For each virtual machine, delay startup for:
10
seconds
Continue immediately if the VMware Tools start
Default Shutdown Delay
For each virtual machine, delay shutdown for:
30
seconds
Shutdown Action:
Power Off
Startup Order
Power on the specified virtual machines when the system starts. During shutdown, they will be stopped in the opposite or
Order
Virtual Machine
Startup
Startup Delay
Shutdown
Shutdown Delay
Automatic Startup
1 windows2003 Enabled 10 seconds Shut do... 30 seconds
2 redhat5 Enabled 10 seconds Shut do... 30 seconds
3 VMA4.0 Enabled 10 seconds Shut do... 30 seconds
Any Order
Manual Startup

5.1.3 Configuring the port

- The SPS use UDP 3034 as the communication port with NMC as default.
  Note: If the UDP 3034 is captured by the other program, the value of the port will be added 1(range from 3034~3083)

- Open the UDP port by the following command if the port is disabled：
  iptables -I INPUT -p udp --dport 3034 -j ACCEPT
  iptables -I OUTPUT -p udp --dport 3034 -j ACCEPT
  /etc/rc.d/init.d/iptables save

5.2 SPS Configuration

- Start VMA, refer to the chapter 3 (Linux with CUI) to finish the SPS Installation and configuration.
  Note: please add with sudo because root privilege is forbid.

- The config.pl is used to add the hosts to be shutdown.
  Go to the ShutdownScript subdirectory: **cd /opt/sps/ShutdownScript**
  Enter the command: **sudo ./config.pl**
  Input the target host ip(or hostname), username, password. SPS supports multi-hosts

shutdown.

For example: 172.18.127.125 and 172.18.127.110 will be added:

```
vi-admin@localhost:/opt/MonitorSoftware> sudo ./config.pl
Enter your target host ip or hostname:
172.18.127.110
Enter your host username:
root
Enter your host password:
: command not found:
vi-admin@localhost:/opt/MonitorSoftware> sudo ./config.pl
Enter your target host ip or hostname:
172.18.127.125
Enter your host username:
root
Enter your host password:
: command not found:
```

The host information will be saved in hostlist document.

Note: The password will be encrypted.

```
vi-admin@localhost:/opt/MonitorSoftware> cat hostlist
172.18.127.110          root            UGEkJHdPcmQ=
172.18.127.125          root            bmlkaGhpcw==
```

- Set the shutdown script for VMware ESXi. The document of shutdownESXi.sh is the script to shut down the host and virtual machines.

  Enter the command: **sudo ./SPS -i**

  Find the two lines in the configuration and edit it as below:

  <EnableScript>1</EnableScript>

  <Script>**/opt/sps/ShutdownScript/shutdownESXi.sh**</Script>

- Set the Script Max Execution time. Time based on the amount of Virtual machines. Set apart 30s for each virtual machine.

  For example: there are ten virtual machines:

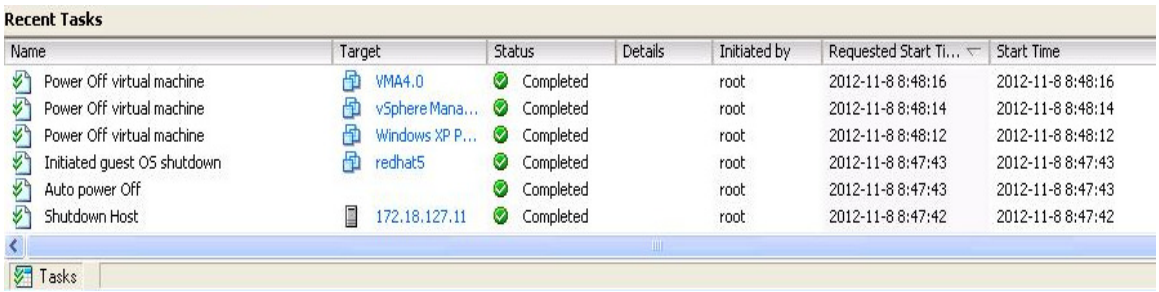
  Enter the command: **sudo ./SPS -i**

  Find the line in the configuration and edit it as below:

  <MaxScriptTime>**300**</MaxScriptTime>

- Restart the SPS service, enter the command : **sudo ./SPS –r**

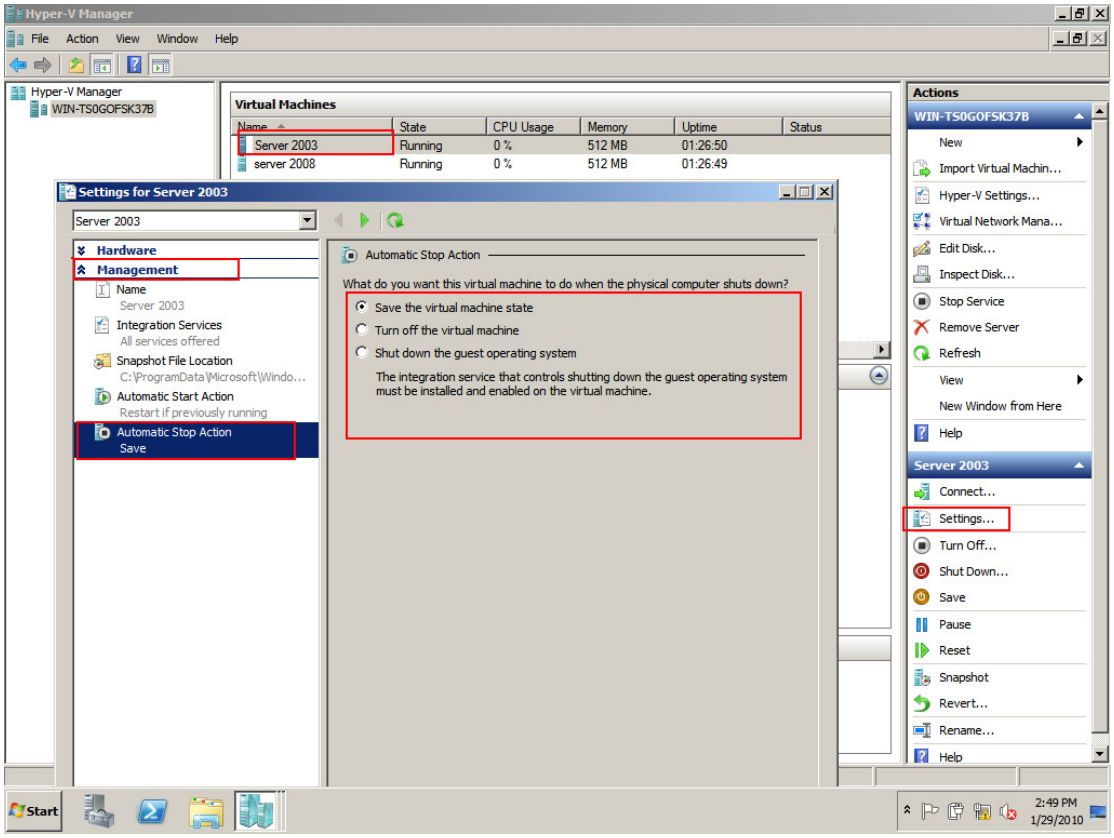
- The time sequence for host and VMs shutdown can be seen by VMware client as below:



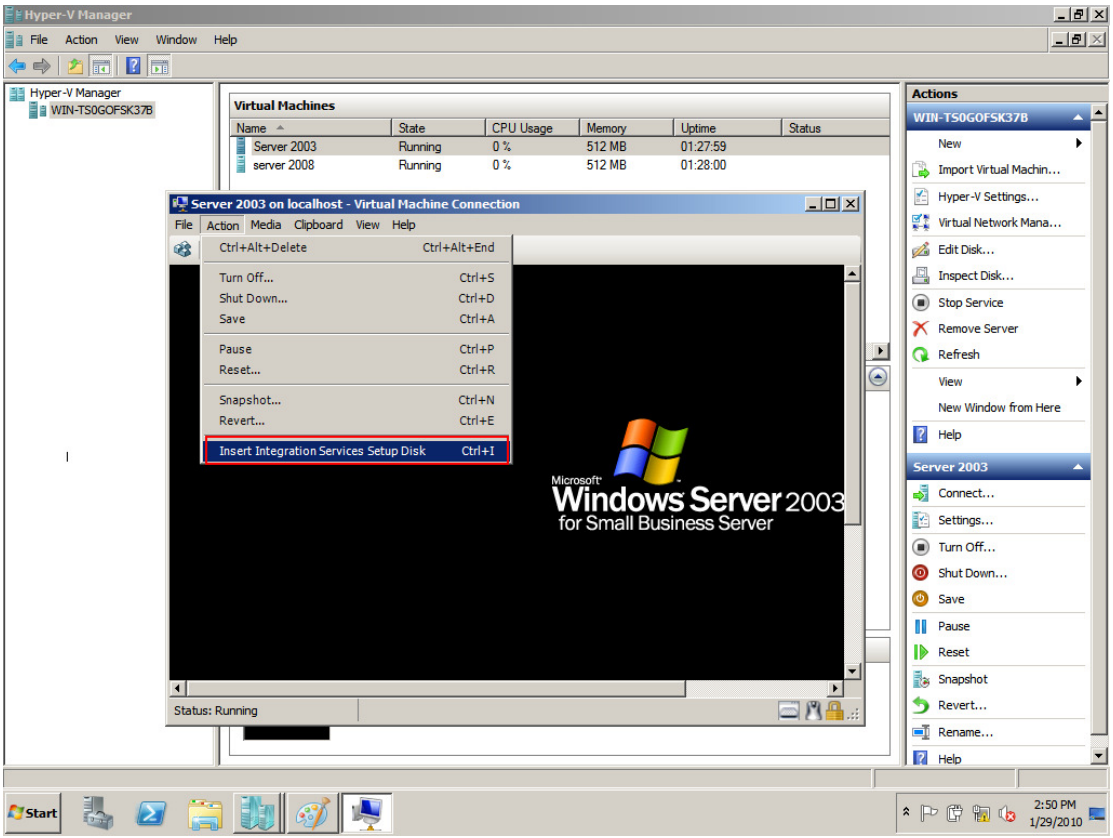
6 Installation and configuration for SPS in the Hyper-V Server 2008

6.1 Hyper-V configuration

- Start Hyper-V Manager in the client
  For example: there are two virtual machines, Windows server 2003 and 2008.
  Select the VM. Click Setting ->“Automatic Stop Action Save”, there are three methods.
  Save the virtual machine state：
  Turn off the virtual machine：
  Shut down the guest operating system：

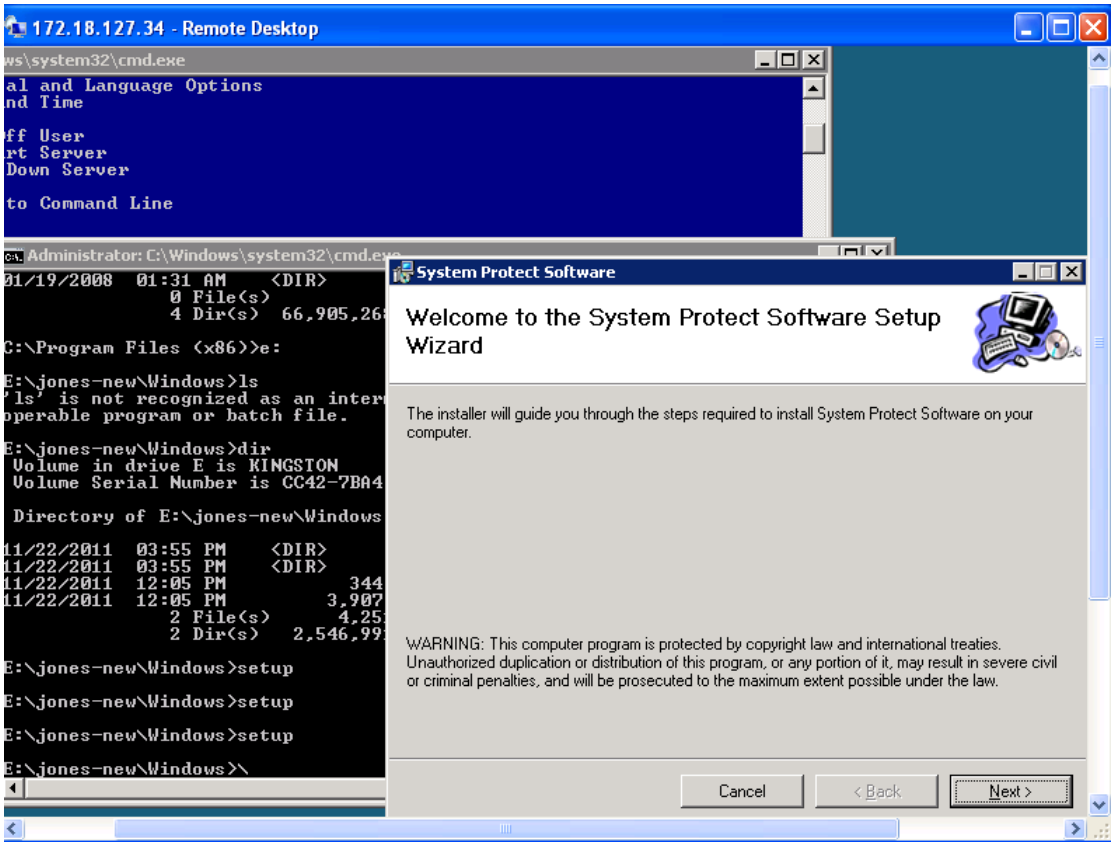


- If the third method is selected, install the “Integration Service” in the Action menu



6.2 Installing and configuring the SPS

- Copy the installation file “setup.exe” to Hyper-V server 2008, enter the path where the installation file exists
- Install the SPS, enter the command: setup.exe.
  By the default, the SPS file is installed to the directory C:\Program Files\System Protect Software for the 32 bit windows. And it is installed to the directory C:\Program Files(x86)\System Protect Software for the 64 bit windows.

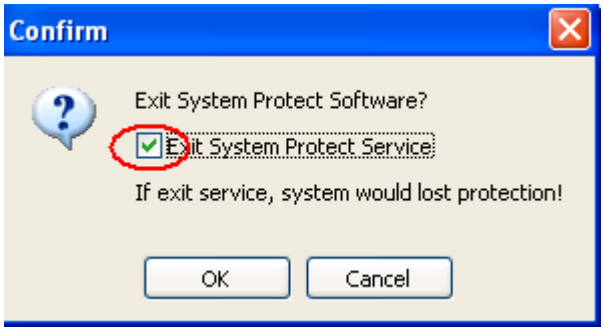

172.18.127.34 - Remote Desktop
Administrator: C:\Windows\system32\cmd.exe
System Protect Software
Welcome to the System Protect Software Setup Wizard
The installer will guide you through the steps required to install System Protect Software on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

- Enter to the installation path: cd C:\Program Files(x86)\System Protect Software
  Start SPS service and user Interface by the command: StartSPSService.exe

- Refer to the chapter 2.3 to finish the SPS configuration.

6.3 Uninstall the SPS

- Close the SPS user interface.

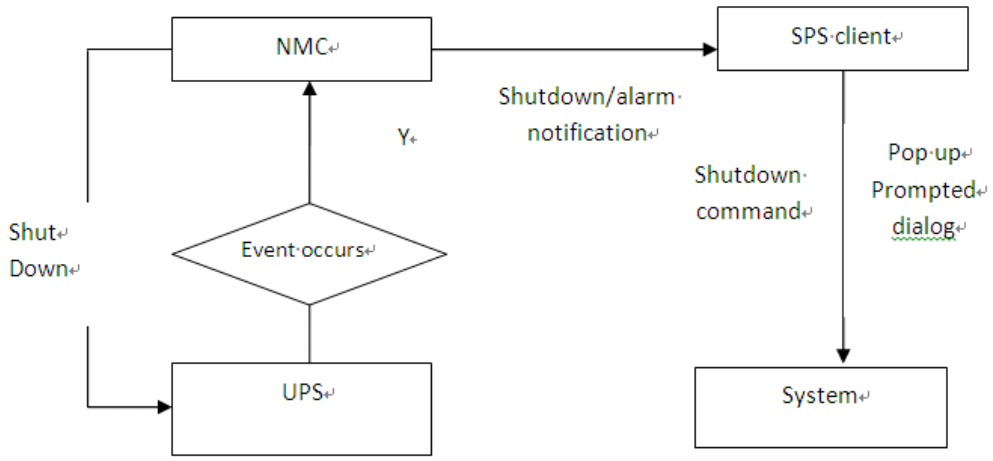


- Enter to the directory where the installation package existed. Enter the command: setup.exe:

System Protect Software
Welcome to the System Protect Software Setup Wizard
Select whether you want to repair or remove System Protect Software.
Repair System Protect Software
Remove System Protect Software
Cancel
< Back
Finish

7 Shutdown Operation

7.1 Shutdown flow chart



7.2 Shutdown setting（NMC Webpage Side）

7.2.1 Shutdown actions setting

- Open the NMC website, select UPS Management ->UPS shutdown, and check the Actions setting.

  There are four kinds of define for Actions:

Action	Definition
Disable	The NMC will not send the alarm and shutdown notification to the SPS client, when the events occur.
Warning	The NMC will send the alarm notification to the SPS client, when the events occur.
Client Shutdown	The NMC will send the alarm and shutdown notification to the SPS client, when the events occur.
Client &UPS Shutdown	The NMC will send the alarm and shutdown notification to the SPS client when the events occur. Besides, the NMC will send the shutdown command to the UPS.

  Note：Select the action to Client Shutdown or Client &UPS Shutdown, so that the system can

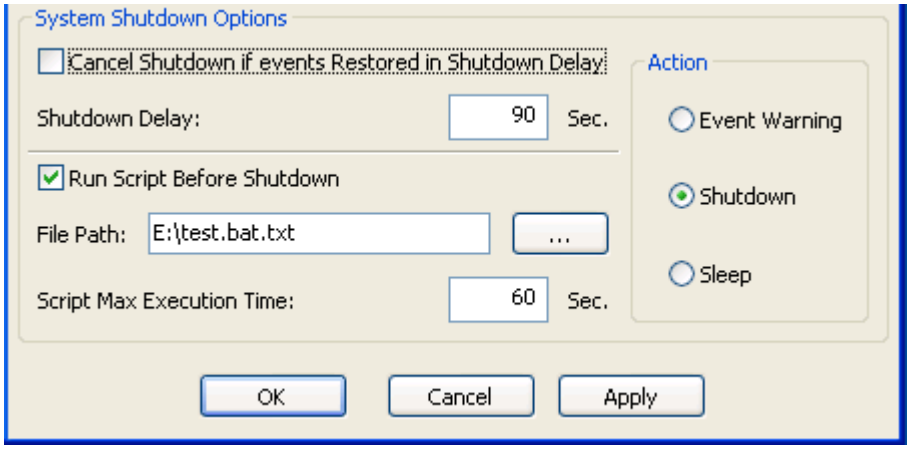
be shut down gracefully by the SPS client.

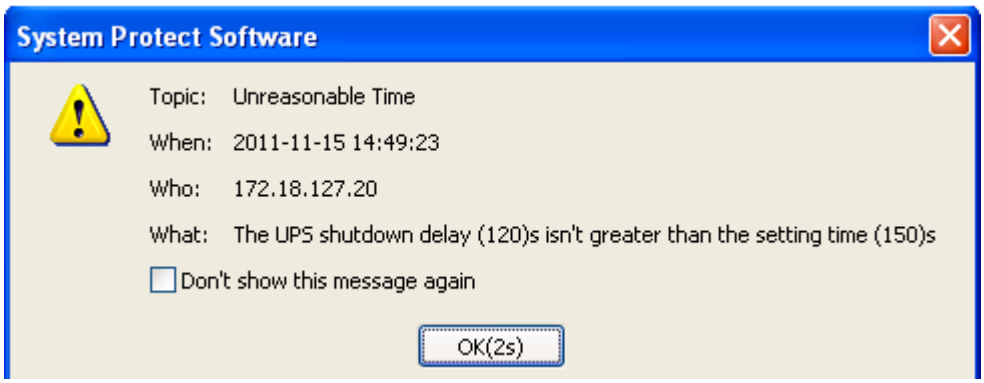
7.2.2 Warning Period Setting

- Open the NMC website, select UPS Management ->UPS shutdown. Check the warning period setting.
  For example:
  The Warning Period is set to 30S and the Warning Interval is set to 10S.
  The NMC will send the alarm notification to the SPS client every 10 seconds and will last about 30 seconds.

7.2.3 UPS Shutdown Delay Setting

- Open the NMC website, select UPS Management ->UPS shutdown. Check the UPS Shutdown Delay setting.
  The NMC will send the shutdown notification to the SPS client when the warning period is met, then the UPS will be shut down after the shutdown delay interval if the action is “Client &UPS Shutdown”.
  By the default, the UPS shutdown delay timer is 120 seconds.
- Make sure the time for UPS Shutdown Delay should be longer than the timer for Shutdown delay plus Script MAX Execution time in SPS client, or else the warning dialog will pop up that the time is unreasonable.
  For example:
  The Shutdown delay timer is 90 seconds and the Script Max Execution Time is 60 seconds,
  The total time value is 150 seconds in SPS client.
  But the UPS shutdown Delay time is 120 seconds in NMC webpage side.
  The UPS shutdown Delay time is shorter than the 150 seconds, so the alarm dialog will pop up that the time is unreasonable.




System Protect Software
Topic: Unreasonable Time
When: 2011-11-15 14:49:23
Who: 172.18.127.20
What: The UPS shutdown delay (120)s isn't greater than the setting time (150)s
Don't show this message again
OK(2s)

7.2.4 Shutdown continue or not if events restored.

Open the NMC website, select UPS Management ->UPS shutdown, enable/disable the checkbox for Cancel UPS shutdown if events restored.

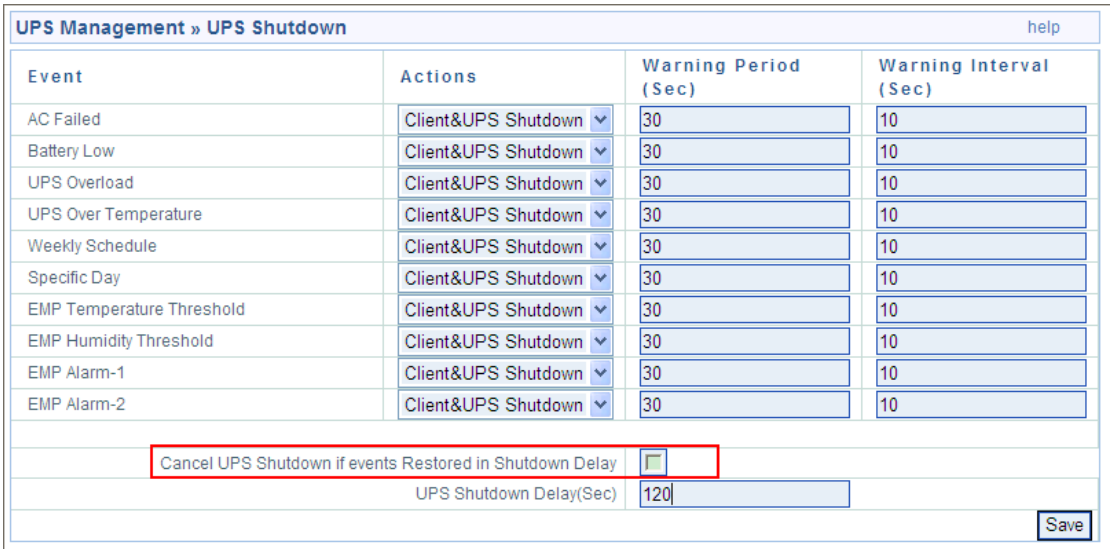
- Select the checkbox: The NMC will cancel the shutdown notification to the SPS client if the events restored during the system shutdown delay interval.
- Unselect the checkbox: The NMC still send the shutdown notification to the SPS client if the event restored during the system shutdown delay interval.

7.3 Shutdown order

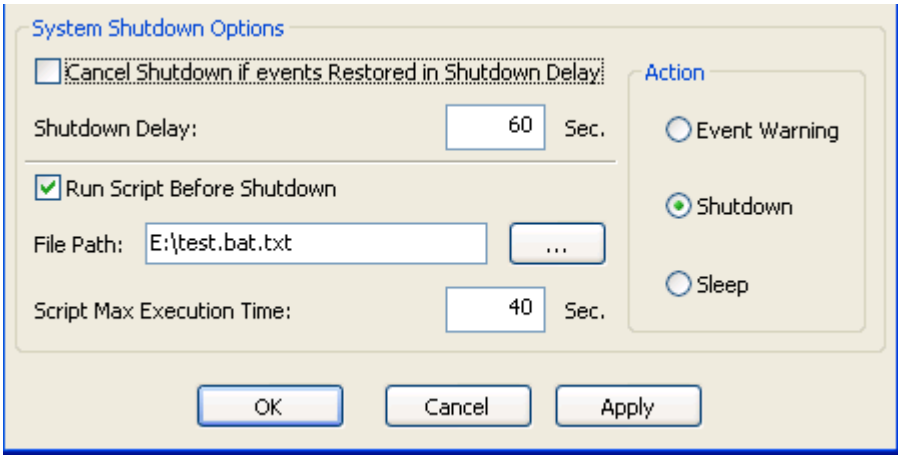
7.3.1 Shutdown continue if events restored

For example：

- NMC webpage side：
  Set the action to Client &UPS Shutdown, set the warning period to 30s, set the UPS Shutdown Delay to 120s, unselect the Cancel UPS shutdown if event restored checkbox.



- SPS client side：
  Set the Shutdown Delay to 60s, set Script Max Execution Time to 40s, unselect Cancel Shutdown if events restored in Shutdown Delay.

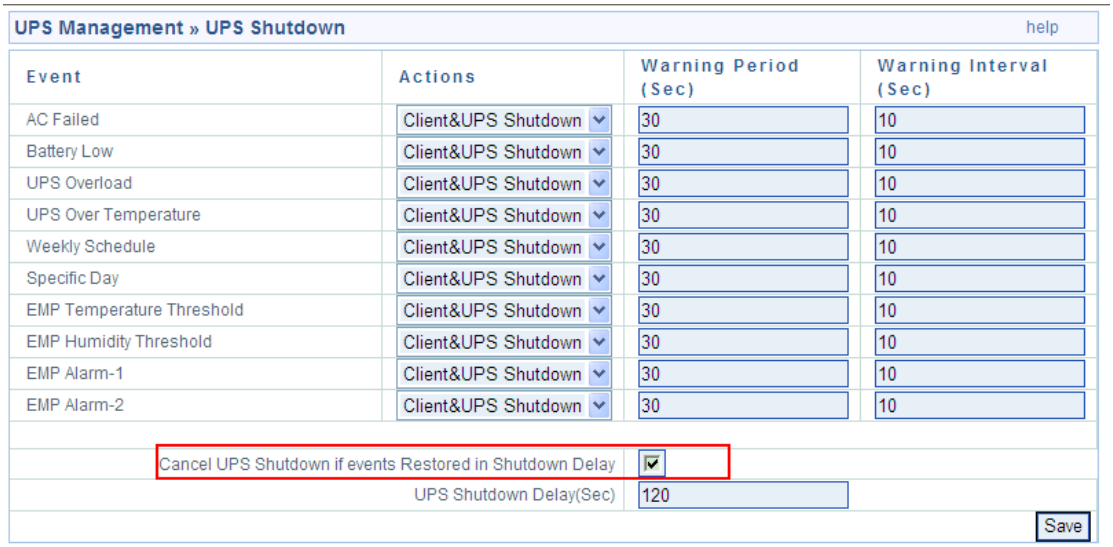


- Shutdown order:
  When the events occur, the SPS will pop up warning dialog, the system start to shut down delay counter after 30 seconds warning.
  When the shutdown delay time is met (60s), the system starts to execute the shutdown script. And the system starts to shut down after 40s.
  The UPS will be shut down after 20s (120-60-40=20).
  Note: The system and UPS shutdown continue if the events restored during the system shutdown delay interval. It will take effect to sleep function as also.

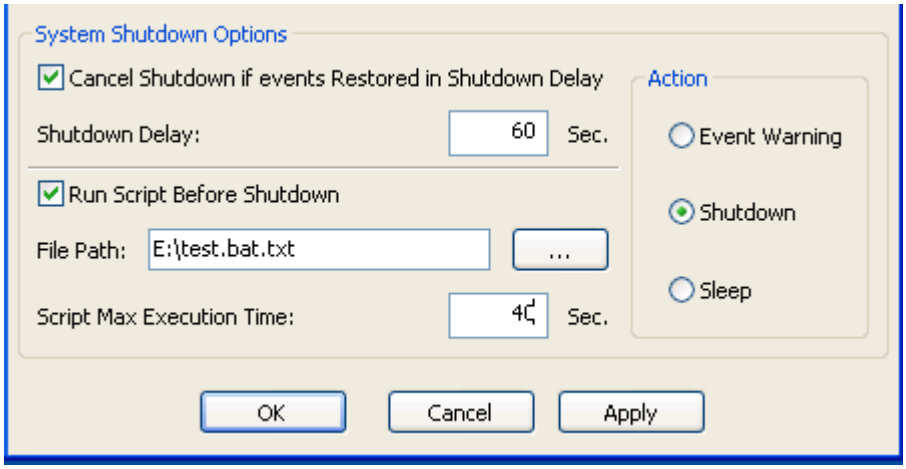
7.3.2 Shutdown discontinue if events restored

For example：

- NMC webpage side：
  Set the action to Client &UPS Shutdown, set the warning period to 30s, set the UPS shutdown Delay to 120s. Select the Cancel UPS shutdown if event restored checkbox.



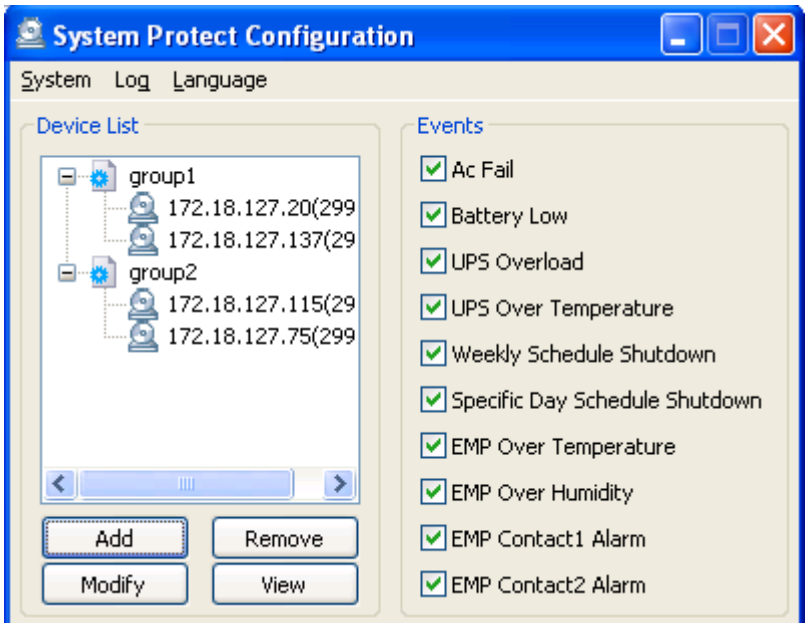
- SPS client side：
  Set the Shutdown Delay to 60s, set Script Max Execution Time to 40s.
  Select Cancel Shutdown if events restored in Shutdown Delay.



- Shutdown order:
  When the events occur, the SPS will pop up warning dialog, the system start to shut down delay counter after 30 seconds warning.
  When the shutdown delay time is met (60s), the system starts to execute the shutdown script. And the system starts to shut down after 40s.
  The UPS will be shut down after 20s (120-60-40=20).
  Note: The system and UPS shutdown discontinue if the events restored during the system shutdown delay interval. It will take effect to sleep function as also.

7.4 Redundant UPS Input shutdown

For a computer powered by more than one NMC UPS, we can add them into cluster.
Enter the IP address of NMC via click “Add” button on the screen of SPS.
Enter a Cluster name, for example, group1.
Add second NMC IP address, and enter the same Cluster name.
The NMC UPSs that under the same Cluster name will become a group
The system will start to shut down when the shutdown conditions are all met for the devices under the group1



7.5 Simulate shutdown by event

Before doing this simulate test, please make sure the computer system is not running critical mission, and is allowed to shut down for a while.

Open the NMC website, select UPS Management -> UPS Powered Devices.

- The server for the SPS client will be added to the table if the communication is established between the SPS and NMC.
- Select the event in the Remote PC Shutdown Test list, click submit button, the NMC will send the warning/shutdown notification to the SPS client.
- The SPS will show the alarms and shutdown or sleep the computer system. NMC will send the shutdown notification during the “UPS Shutdown Delay”.
- After the test, wait for “UPS Shutdown Delay” time, then turn on the computer system.